

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-326812

(43)Date of publication of application : 12.12.1995

(51)Int.Cl.

H01S 3/18

(21)Application number : 06-116747

(71)Applicant : YOKOGAWA ELECTRIC CORP

(22)Date of filing : 30.05.1994

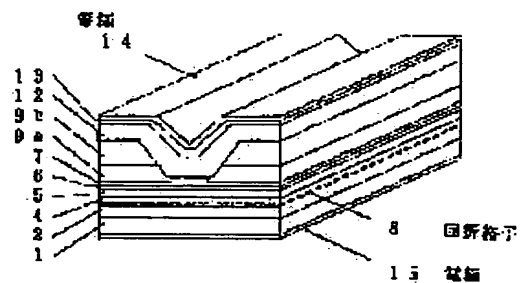
(72)Inventor : INOUE TAKESHI  
NAKAJIMA SHINICHI

## (54) DISTRIBUTED FEEDBACK TYPE SEMICONDUCTOR LASER AND ITS MANUFACTURE

## (57)Abstract:

PURPOSE: To flatten an active layer, enable controlling refractive index difference to be small, and make self-alignment possible, by setting the refractive index of a rib layer high as compared with a clad layer, and setting the etching depth of the rib layer smaller than the horizontal width of the rib layer.

CONSTITUTION: The distributed feedback type semiconductor laser has the following on a substrate 1; a diffraction grating 3, an active layer 6, a light confinement layer 5, a rib layer, and a clad layer 12 of low refractive index which confines light in the vertical direction. The etching depth of the rib layer is set smaller than the horizontal width of the rib layer. A current constriction layer 9a having the same refractive index as the clad layer 12 is formed on the side surface of the rib layer. The current constriction layer 9a is selectively grown and formed by using a mask which has been used for working the rib layer in a stripe type. On the side surface of the current constriction layer 9a, a (111) low growth speed face is made to appear. Thereby a rib type semiconductor laser wherein the active layer is flat and the refractive index difference can be reduced is formed.



## LEGAL STATUS

[Date of request for examination] 24.02.1999

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3106852

[Date of registration] 08.09.2000

[Number of appeal against examiner's decision of rejection]





